FUNK

SERVICE AND REPAIR MANUAL

PUMP DRIVES

MODEL NUMBER
28000
59000
61000
SERIES

FOLEY ENGINES
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NOTE: This Service Manual contains data referred to by Warning Tag on New or Repaired Transmissions.

WARNING
THIS TRANSMISSION DOES NOT CONTAIN LUBRICATION. TO PREVENT DAMAGE, FILL WITH OIL WHICH MEETS OR EXCEEDS EP GEAR LUBRICATION SPEC. MIL-L-2105C OR API CLASSIFICATION GL-5 PER RECOMMENDATIONS OUTLINED IN SERVICE MANUAL.

The above tag is attached to each new and (or) repaired unit when it is shipped.

It is for your protection and should not be removed until the unit has been properly serviced under the instructions of this manual.

LUBRICATION RECOMMENDATIONS

LUBRICANT TYPE:

Any Oil which meets EP Gear Lubricant Spec MIL-L-2105C
OR
API Classification GL-5

LUBRICANT GRADE:

Weather Temperature
Below -10°F (-23°C) Use 75 W
Above-10°F and upto 100°F (37.8°C) Use 80W-90
Above 100°F (37.8°C) Use 85W-140

SERVICE PROCEDURE

PUMP DRIVES

All applications subject to Foley Engines Approval.

SERVICE:

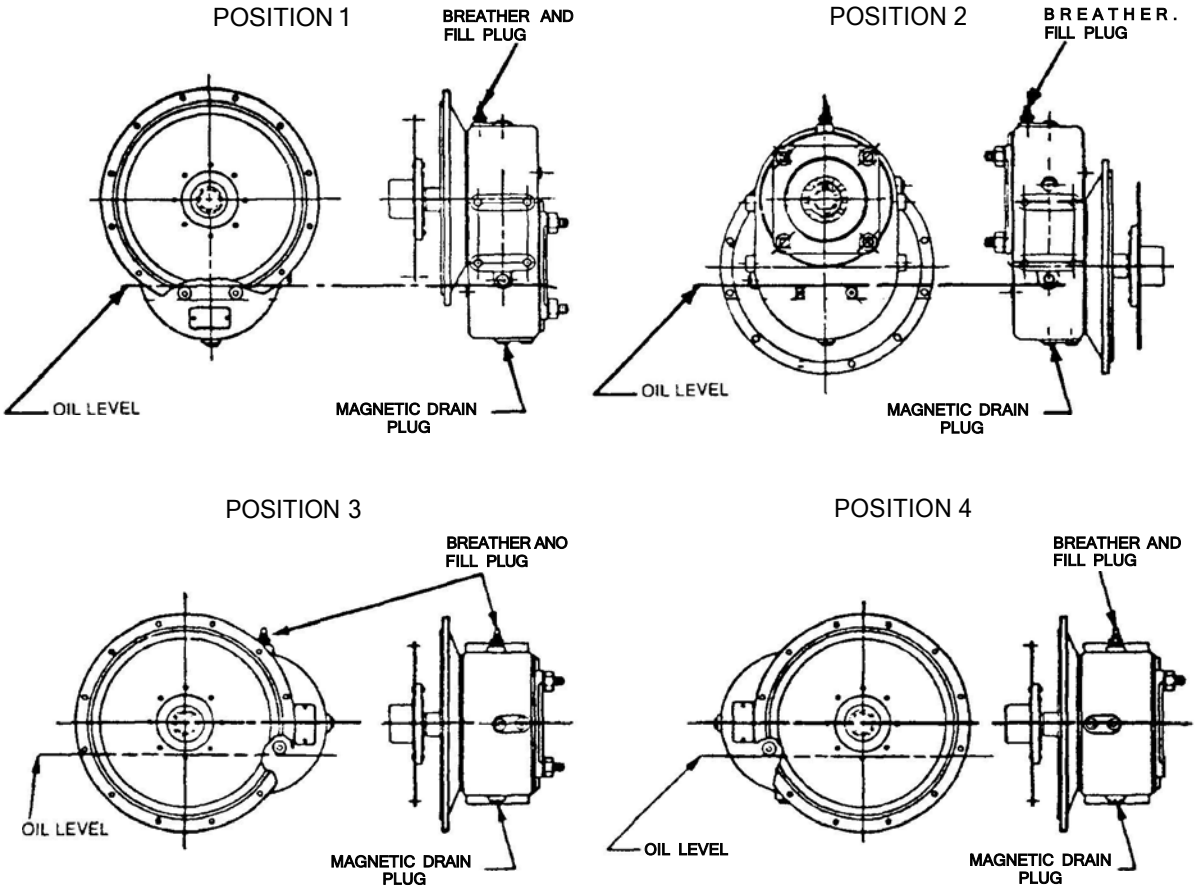
The type of service and the operating conditions will determine the maintenance interval. However, it is recommended that the oil level be checked weekly, at the same time checking for oil leaks.

Because the lubricant system is the heart of the unit, it is especially important that the oil be kept clean.

SERVICE PROCEDURE AND RECOMMENDATIONS:

1. Check unit for operational warning tags.
2. Stop engine before checking or adding oil.
3. Clean around oil fill before checking or adding oil.
4. It is recommended that lubricating oil be changed after the first 500 hours of service.
5. Thereafter, and under normal operating conditions, it is recommended that the oil be changed after every six months of operation. The oil in the unit should be changed whenever the oil level shows traces of dirt or effects of high temperature, evidenced by discoloration or strong odor.
6. Drain oil while the unit is still warm, examining for contamination or metal particles.
7. Clean all magnetic drain plugs before replacing.
8. Always use clean oil in clean containers.
9. Do not overfill. This will result in overheating and possible malfunction of the unit. Filling instructions, next page.
10. Fill with MIL-L-2105C or API-GL-5.
11. Maximum operating oil temperature 225° F (107.2° C).
    LUBRICANT GRADE: Weather Temperature
    Below -10° F (-23° C) Use 75 W
    Above -10"F and up to 100° F (37.8° C) Use 80W-90
    Above 100° F (37.8° C) Use 85W-140

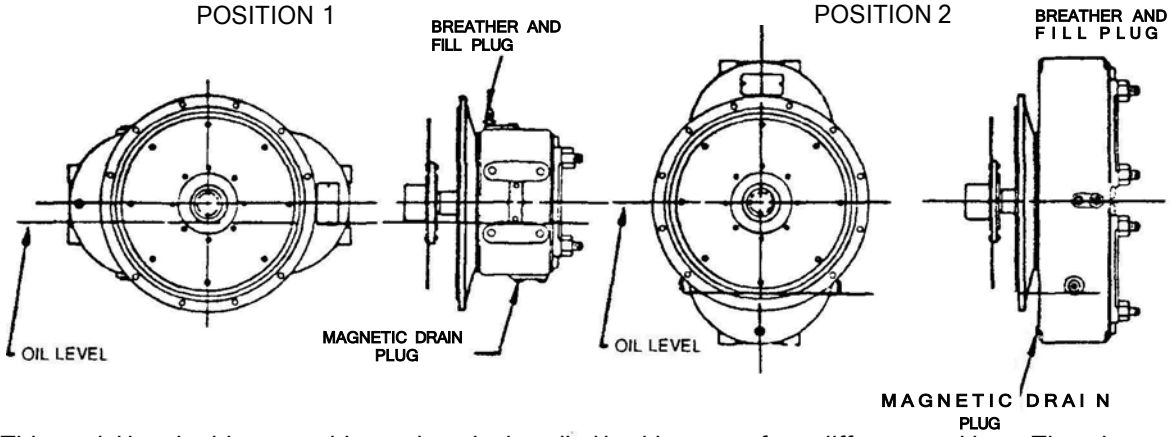
MODEL 28101



The oil capacity for positions 1 and 2 is 1½ quarts or 1.42 liters (approximate).

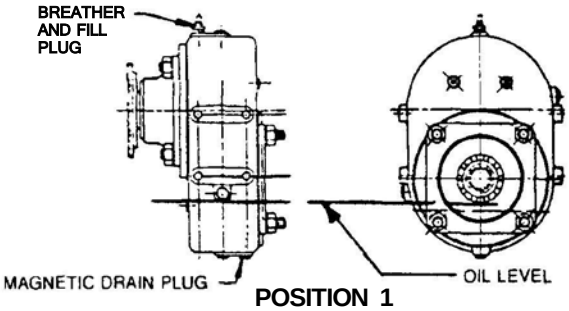
This unit can be installed in any one of four different positions. The oil capacity is approximately 2½ quarts or 2.37 liters for positions 3 and 4. The above drawings show the oil level for each installation and the position of the drain plug, fill plug, and breather.

MODEL 28102

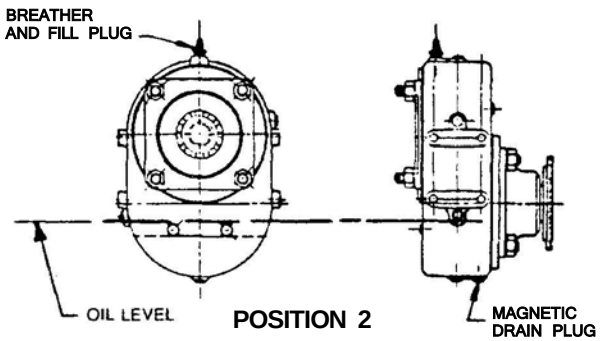


This model is a double pump drive and can be installed in either one of two different positions. The above drawings show the oil level and the location of the breather and magnetic plugs and filler plugs. The approximate oil capacity in position 1 is 4½ quarts or 4.23 liters and position 2 is 1½ quarts or 1.42 liters.

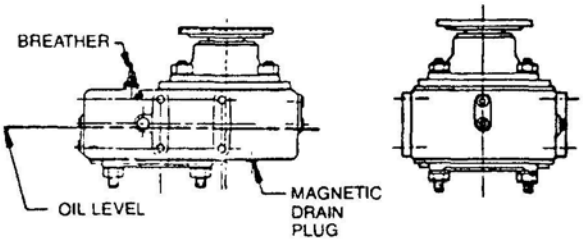
This unit, being an independent input can be mounted in any one of six different positions. The drawings below show the location of the oil level, breather and magnetic drain plugs, in the various positions. The approximate capacity in position 1 and 2 is 2½ quarts or 2.37 liters. In position 3 and 4 the oil capacity increases to approximately 4 quarts or 3.97 liters. In positions 5 and 6, approximate oil capacity is 2½ quarts or 2.37 liters.



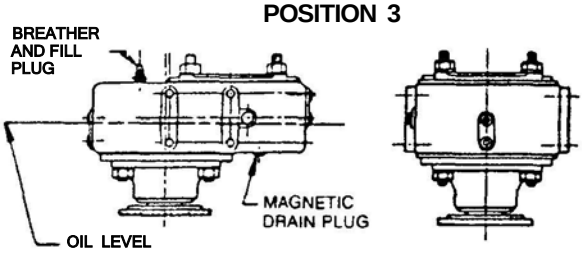
POSITION 1



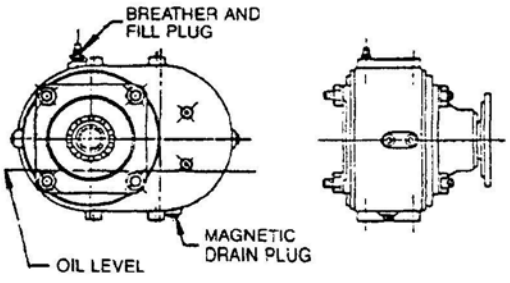
POSITION 2



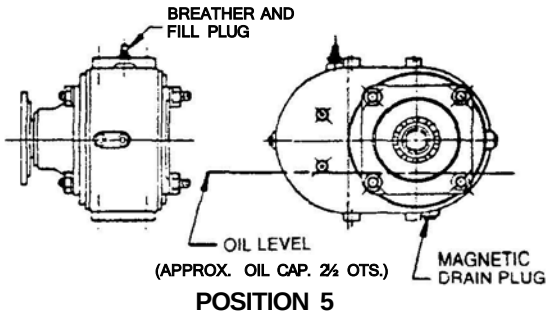
POSITION 3



POSITION 4



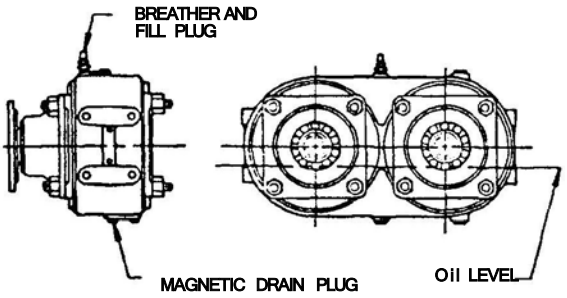
POSITION 6



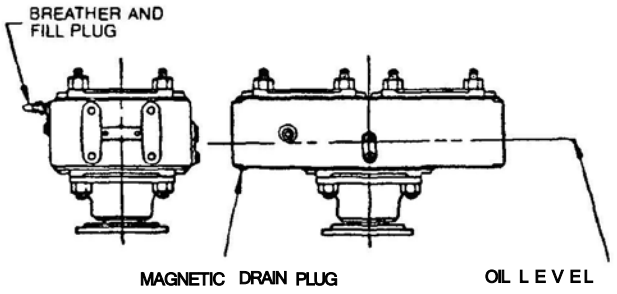
POSITION 5

MODEL 28104

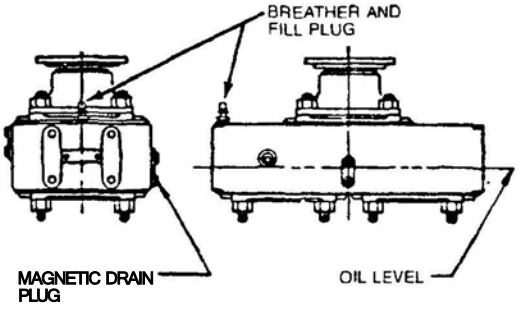
POSITION 1



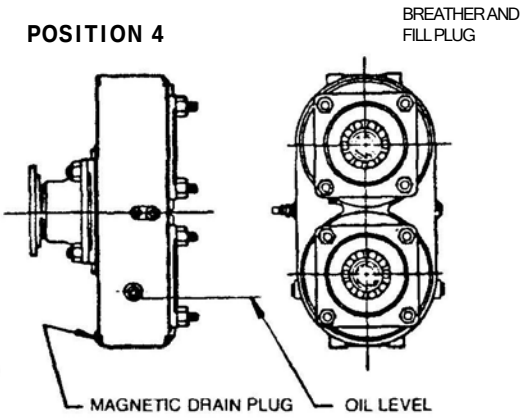
POSITION 2



POSITION 3



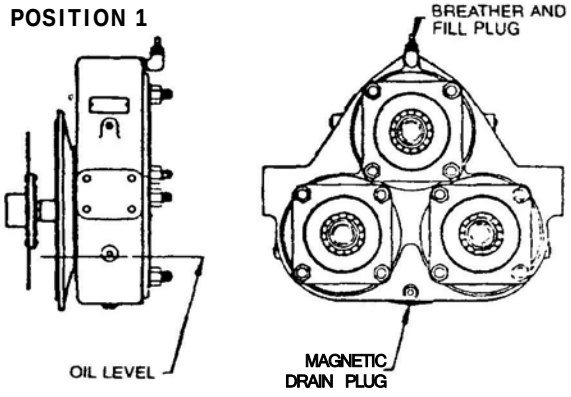
POSITION 4



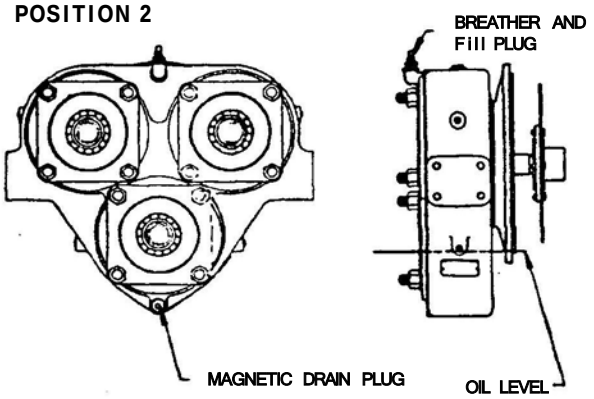
The above drawings describe the four different positions in which this unit can be mounted and the location of the oil level, breather, magnetic drain plugs, and fill plugs. The approximate oil capacity in position 1 is 4½ quarts or 4.23 liters, in position 2 and 3, 5½quarts or 5.21 liters, and in position 4, 1½quarts or 1.42 liters.

MODEL 28111, 12, 13

POSITION 1



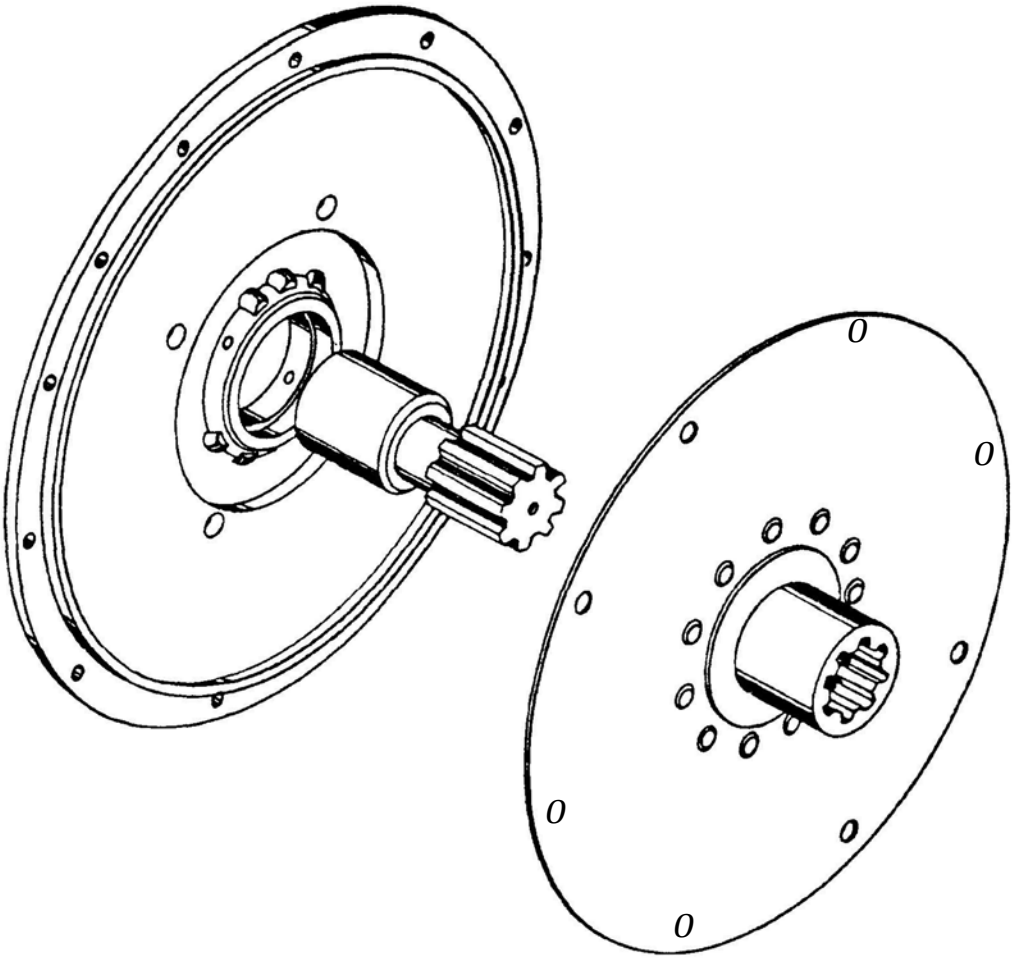
POSITION 2



The three models of the triple pump drive series consists of the engine-mounted independent input and clutch driven. The two mounting positions shown are applicable to all three models. The above drawings show the oil level, magnetic plugs, breather, tapped mounting holes, and oil level plug location.

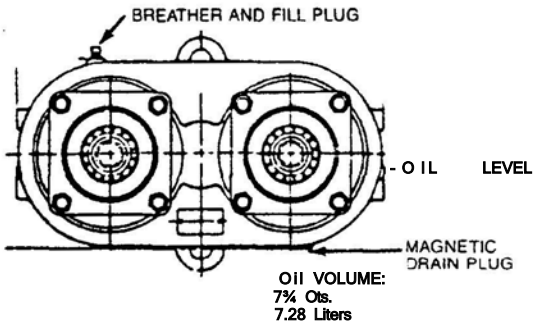
The oil capacity in position 1 is approximately 5½quarts or 5.21 liters and in position 2, approximately 3 quarts or 2.84 liters.

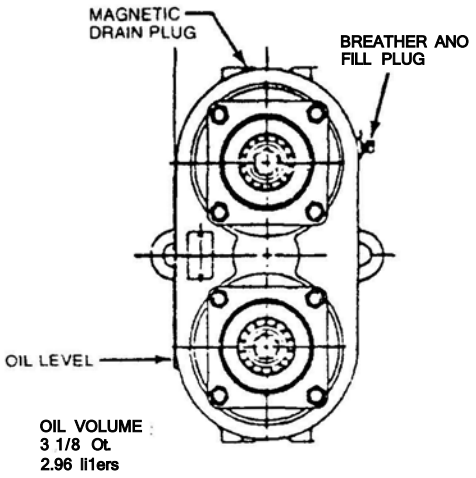
MODEL28105



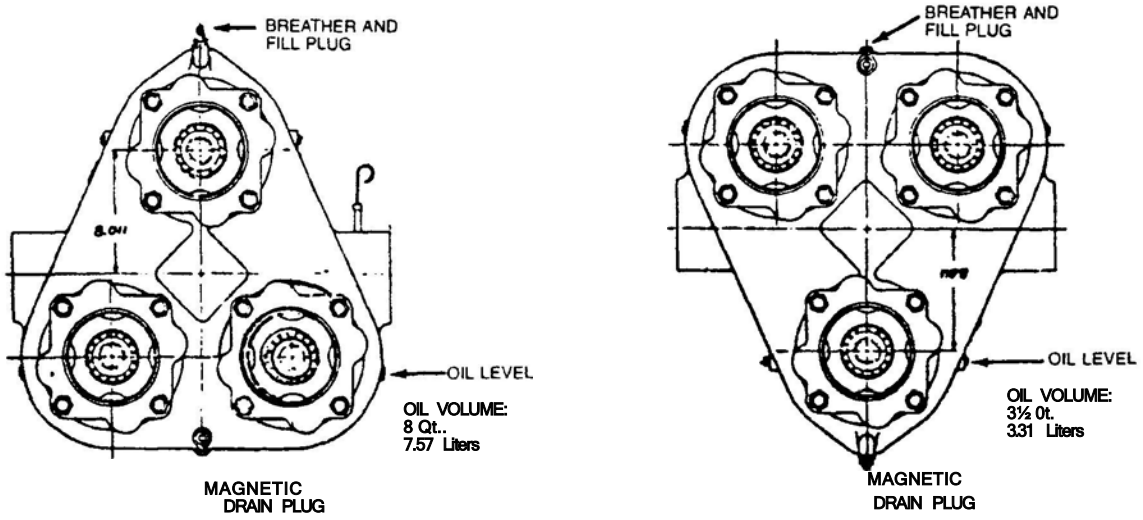
This model is an engine mounted single pump direct drive. The assembly consists of an engine adapter, pump adapter plate. and direct drive shaft. There is virtually no service on this model and no lubrication.

MODEL592M



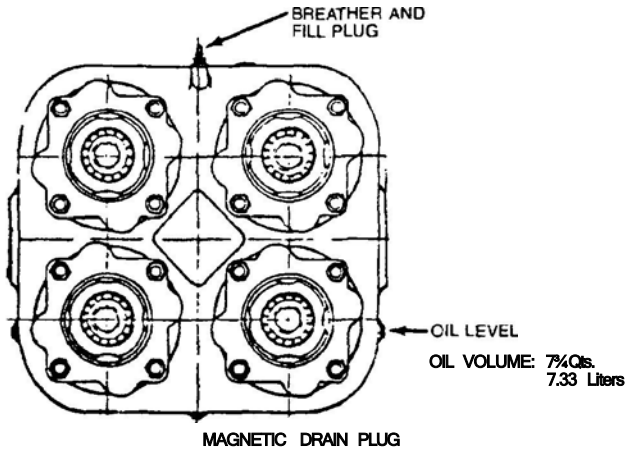


MODEL 593C

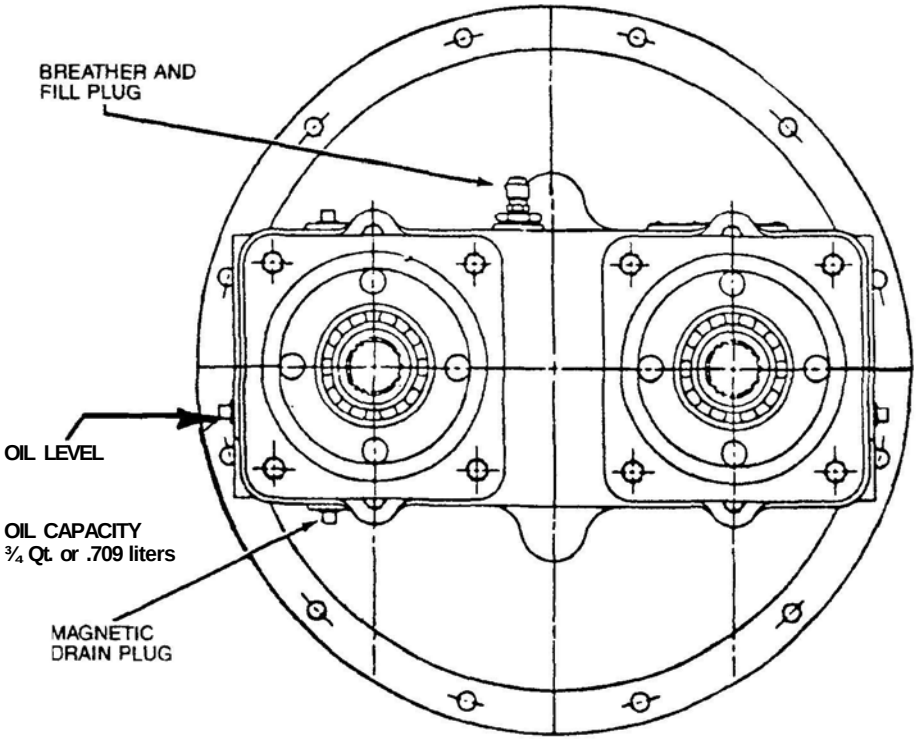


NOTE: UNITS THAT HAVE "DIPSTICK" LEVEL GAUGES CONTAIN THE SAME VOLUME AND LEVEL OF OIL AS THE EQUIVALENT UNIT WITH CHECK PLUG LEVELS.

FUNK PUMP DRIVE MODEL 594M



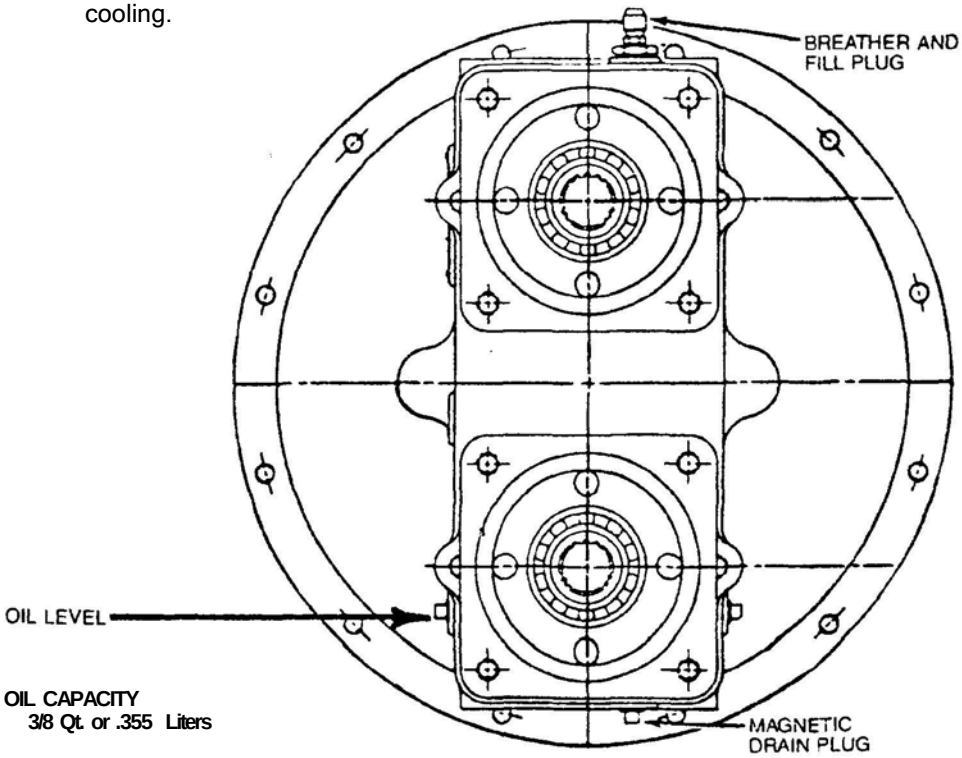
HORIZONTAL MOUNTING FIGURE N0.1

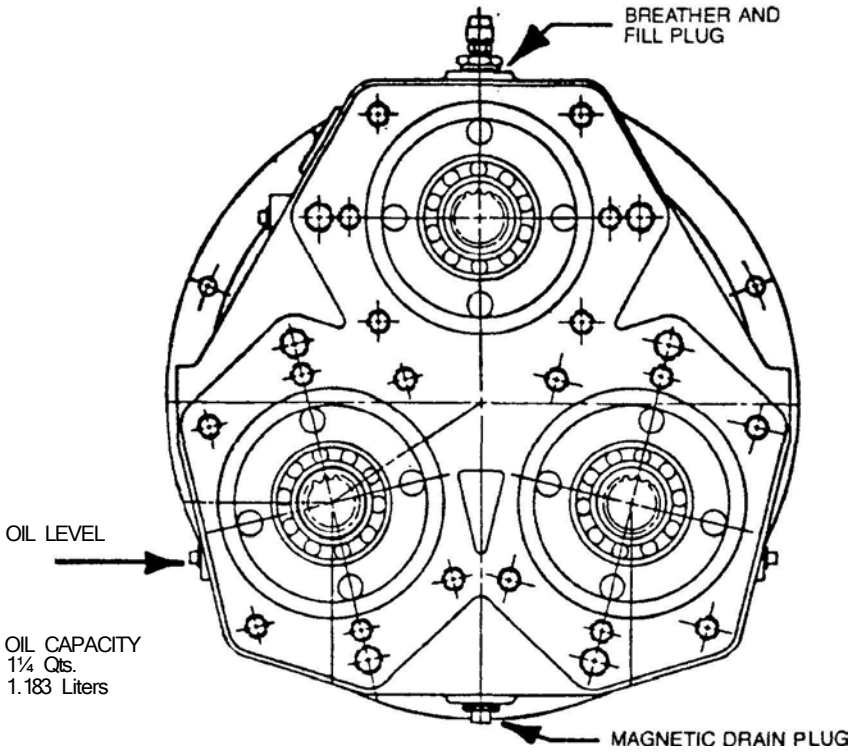


VERTICAL MOUNTING FIGURE NO. 2

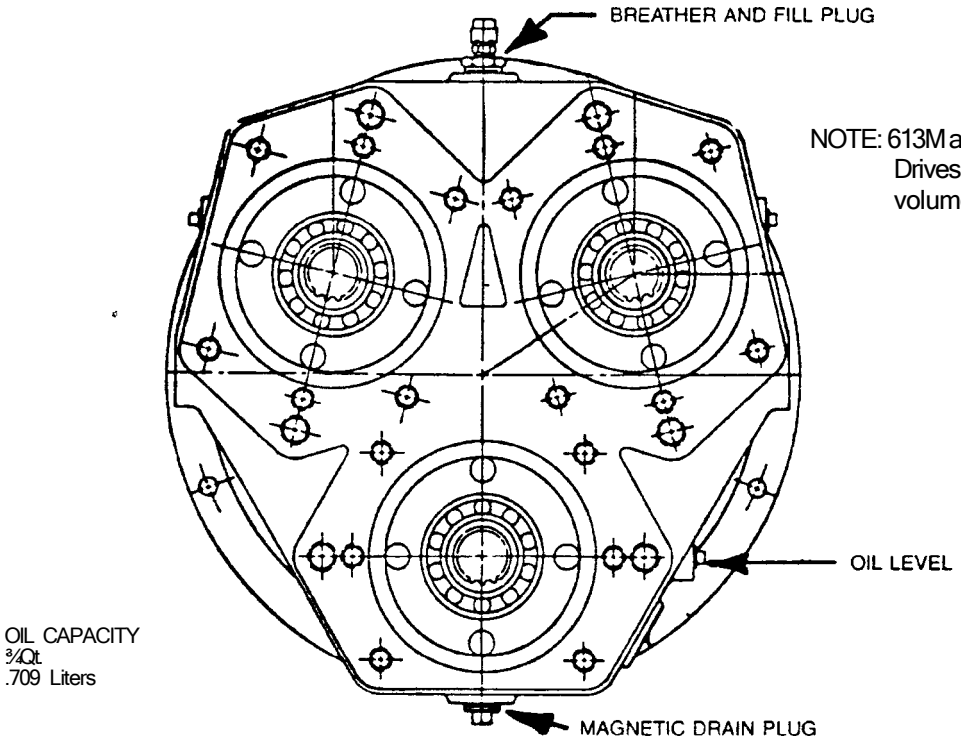
NOTE: Continuous operation above 68 HP (50.73 kW} (horiz. pos.) or 20 HP (14.92 kW} (vert. pos.) should have provisions for auxilliary cooling.

NOTE: 612M & 612C Pump Drives have the same volumetric oil capacity.

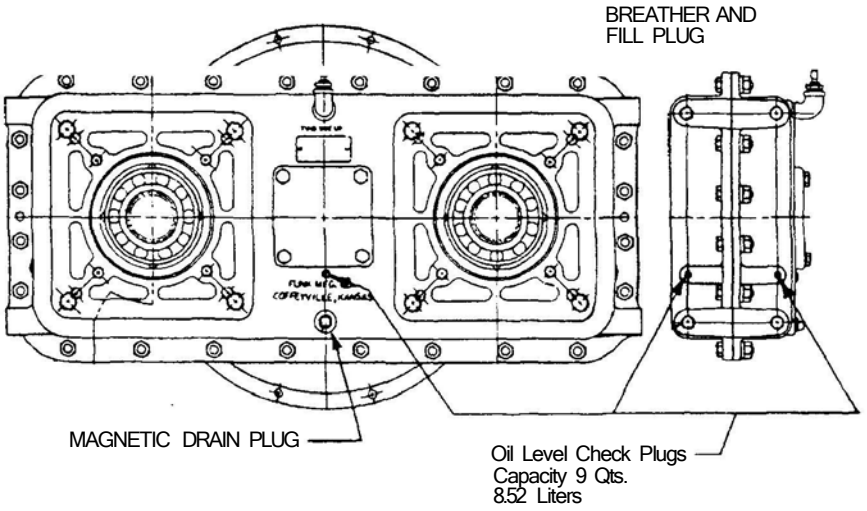




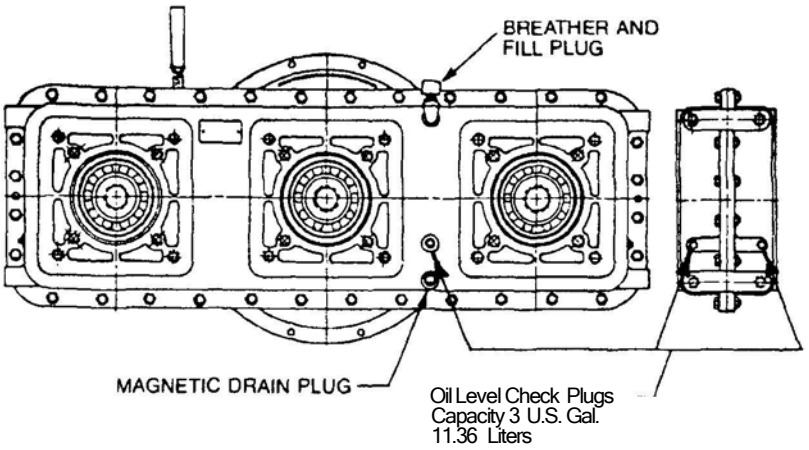
STANDARD MOUNTING FIGURE NO. 3



INVERTED MOUNTING FIGURE NO. 4



Capacity shown is typical for Models 56001 thru 56009.



Capacity shown istypical for Models 56010 thru 56015.

NOTE: DUE TO LUBRICATION SYSTEM DESIGN, MODELS 56000 SERIES, SHOULD ONLY BE MOUNTED AND OPERATED IN HORIZONTAL POSITION SHOWN ABOVE. OPERATION IN ANY OTHER POSITION MAY BE DETRIMENTAL TO GEARS AND BEARINGS.

CLUTCH ADJUSTMENT & LUBRICATION

MODEL NUMBER

SERIAL NUMBER

SPEC. NUMBER

RATIO

LUBRICATION

CLUTCH- Apply small amount of lubricant to clutch throout collar once a day.
POWER TAKE-OFFS - Apply small amount of lubricant to shaft bearings every 50 hours. Gun fittings below.
REDUCTIONS - See service manual for type, grade, and quantity of lubrication.
CLUTCH ADJUSTMENT - SL type clutch. This is a spring loaded type, and need no adjustments.

FUNK MFG. CO.

CLUTCH INSPECTION PLATE FOR "SL" TYPE CLUTCHES

MODEL NUMBER

SERIAL NUMBER

SPEC. NUMBER

RATIO

LUBRICATION

CLUTCH - Apply small amount of lubricant to clutch throwout collar once a day.
POWER TAKE-OFFS - Apply small amount of lubricant to shaft bearings every 50 hours. Gun fittings below.
REDUCTIONS - See service manual for type, grade, and quantity of lubrication.

CLUTCH ADJUSTMENT (OVERCENTER TYPE ONLY)

IMPORTANT - If clutch does not pull, heats, or operating lever jumps out, adjustment is required. To adjust clutch, remove hand hole plate, turn clutch until adjusting lock pin can be reached. Pull adjusting pin out and turn adjusting yoke to right or clockwise until operating lever requires a distinct pressure to engage. A new clutch requires several adjustments until friction discs are worn in.

FUNK MFG. CO.

CLUTCH INSPECTION PLATE FOR OVERCENTER TYPE CLUTCHES

CLUTCH DRIVEN MODELS
SAFE OPERATING SPEEDS

SPECIFICATIONS

CLUTCH MODEL NUMBER	MAXIMUM SAFE OPERATING SPEEDS OVER CENTER CLUTCHES	Heavy Duty Working Torque	Newton Metre
C 108	3100	228	309
C 110	3100	328	445
C 111	2850	387	525
SP 211	2850	910	1234
SP 114	2400	810	1098
SP 214	2400	1620	2197

Heavy Duty

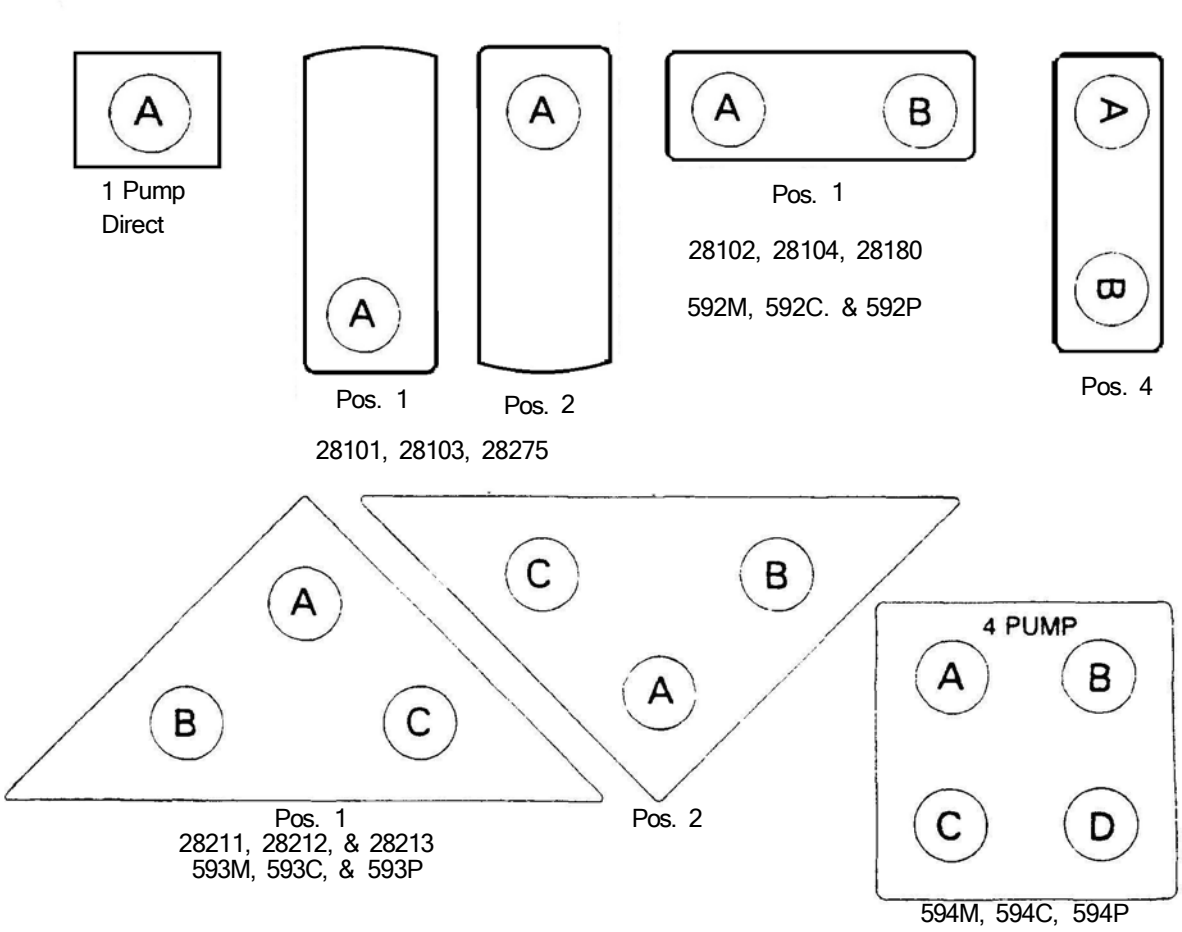
The clutch is used to start inertia loads with frequencies up to sixty (60) engagements per hour. Even more important is that the clutch can start the heaviest inertia load within four (4) seconds and that the product of seconds of clutch slip per engagement times the number of engagements per hour be under 180.

Heavy Duty applications may raise the clutch outer surface temperature to under 150° F (65. 6° C) rise above the ambient air temperature.

The clutch must be selected according to its horsepower absorption capability.

Examples: PTO starting average inertia loads whose starting load is 180% of the running load. Also Rock Crusher applications where the clutch is not used to "break loose" jammed loads.

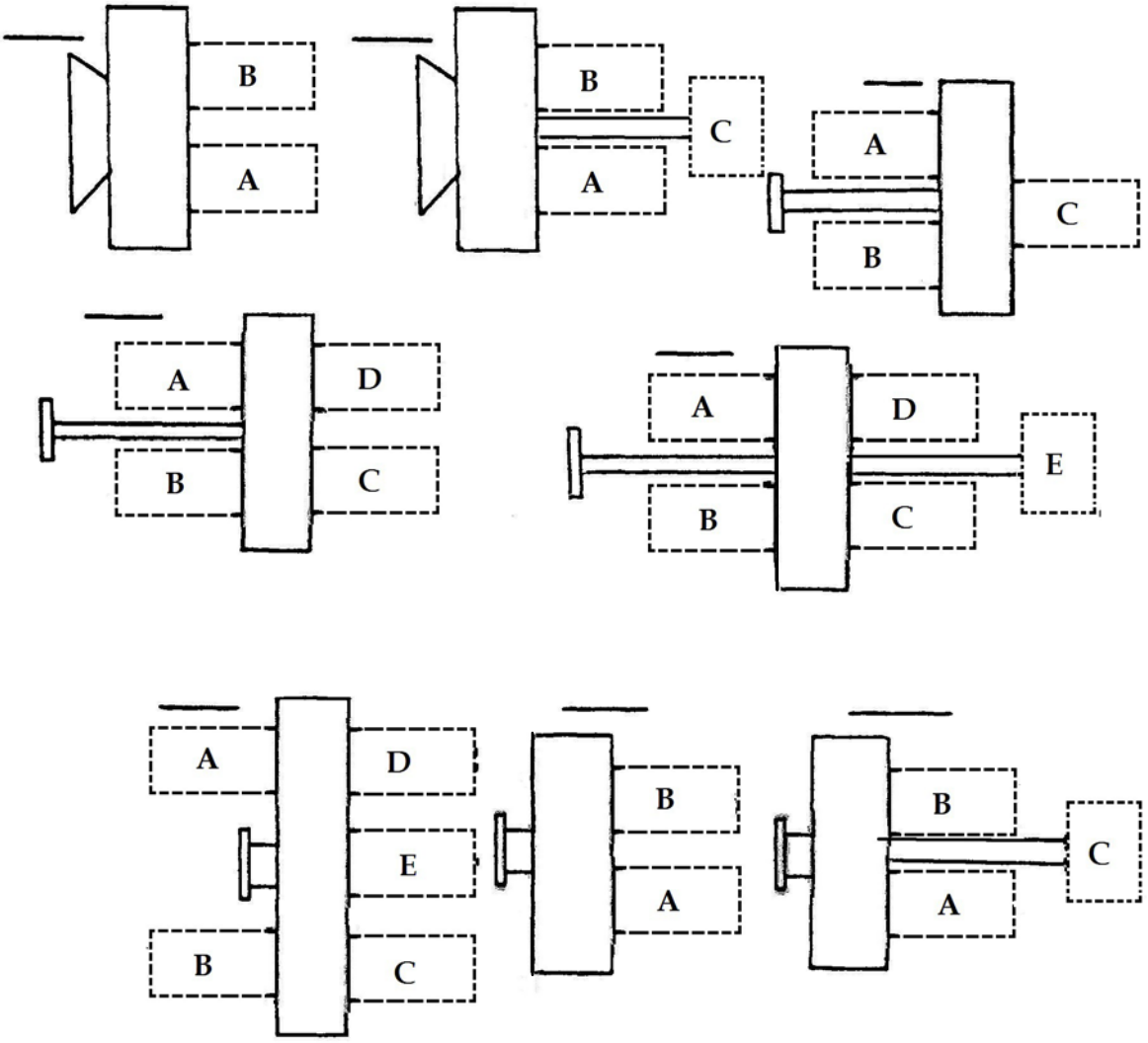
Pump Mounting Position Codes
28000, 59000, and 61000 Pump Positions



Gear box and pump mounting positions *are* shown to standardize communications between customer and factory (vendor) should questions concerning engineering or service arise.

Gear box mounting positions are shown as Pos. 1 or Pos. 2, etc. Pump location positions are shown by letters A, B, C, etc.

Unit arrangement (check the desired configuration)



5. Special Requirements:

1. Direct Drive Models

A. Single pump clutch driven - The model numbers for these units will consist of 8 digits divided into four sections as follows:

28 TXX CX X (28TXXCXX)
A B C D

1. Section A is always 28 and stands for the 28000 series.
2. Section B indicates a clutch operated direct driven unit and designates the nominal clutch size.
   T10 = 10" clutch T11 = 11½" clutch
3. Section C designates the clutch housing size.
   C1 = S.A.E. No. 1 Housing
   C2 = S.A.E. No. 2 Housing
   C3 = S.A.E. No. 3 Housing
   C4 = S.A.E. No. 4 Housing
4. Section D designates the size of pump to be driven.
   A = S.A.E. "A" Pump
   B = S.A.E. "B" Pump
   C = S.A.E. "C" Pump
   D = S.A.E. "D" Pump

EXAMPLE:

28 T11 C2 D (28600XX)
- D — SAE "D" Pump
- C2 — SAE No. 2 Clutch Housing
- T11 — 11½" Clutch
- 28 — 28000 Series

B. Single pump Engine Mounted (Plate Driven) - The model numbers for these units will consist of 6 or 7 digits divided into 3 sections as follows:

28 105 XX (28105XX)
A B C

1. Section A is always 28 and stands for the 28000 series
2. Section B is always 105 and indicates a single pump direct driven unit.
3. Section C designates the size of the engine flywheel housing and special features as follows:
   A = SAE No. 1 Housing
   B = SAE No. 2 Housing
   C = SAE No. 3 Housing
   D = SAE No. 4 Housing
   E = SAE No. 5 Housing
   F = SAE No. 5 Housing with starter cut-out
   G = SAE No. 5 Housing on Ford 172 and 192 (for "B" pumps)
   SE = Special SAE "E" Pump Mount with flywheel housing per spec.

EXAMPLES:

28 105 D (281050)
- D — SAE No. 4 Housing
- 105 — Single Pump Direct Drive
- 28 — 28000 Series

28 105 SE (28105SE)
- SE — Special "E" Pump Mount
- 105 — Single Pump Direct Drive
- 28 — 28000 Series

2. Gear Driven Models

A. Independent Input Models - The model numbers for these units consist of 6 or 7 digits divided into 3 sections as follows:

28 XXX XX (28XXXXX)
A B C

1. Section A will be 28 which stands for the 28000 series.
2. Section B is a 3 digit number that designates the number of pump mounting positions as follows:
   103 = 1 pump 104 = 2 pumps
   212 = 3 pumps
3. Section C consists of 1 or 2 digits that designate the type of drive flange assembly as follows:
   A = Standard drilled flange assembly
   B = 13/s-10 spline assembly
   C = 2114inch keyed shaft assembly
   D = Slotted flange assembly
   E = No drive flange assembly
   F = Standard drilled flange assembly with through shaft
   G = 3/e-10 spline assembly with through shaft
   H = 2½ inch keyed shaft assembly with through shaft
   J = Slotted flange assembly with through shaft
   AD = Input disconnect assembly

B. Engine Mount (Plate Driven) Models - The model numbers for these units consist of six digits divided into three sections as follows:

28 XXX X
A B C

1. Section A will be 28 which stands for the 28000 Series.
2. Section B is a three digit number that designates the number of driven pumps as follows:
   101 = 1 pump 102 = 2 pumps
   211 = 3 pumps
3. Section C consists of 1 letter that designates the engine flywheel housing size as follows:
   A = SAE No. 1 housing
   B = SAE No. 2 housing
   C = SAE No. 3 housing
   D = SAE No. 4 housing
   E = SAE No. 5 housing
   F = SAE No. 5 housing with starter cut out
   G = SAE No. 1 housing with through shaft
   H = SAE No. 2 housing with through shaft
   J = SAE No. 3 housing with through shaft
   K = SAE No. 4 housing with through shaft
   L = SAE No. 5 housing with through shaft

C. Clutch Driven Models - The model numbers for these units consists of 6 digits divided into three parts as follows:

28 XXX X
A-B-c

1. Section A will be 28 which stands for the 28000 series.
2. Section 8 is a three digit number that designates the number of driven pumps as follows:
   275 = 1 pump 180 = 2 pumps
   213 = 3pumps
3. Section C consists of 1 digit letter that designates the engine flywheel housing size and special clutch features as required:
   A = SAE No. 1 housing
   B = SAE No. 2 housing
   C = SAE No. 3 housing
   D = SAE No. 4 housing
   E = SAE No.1 housing with T.D. SP-211 clutch
   F = SAE No.1 housing with T.D. SP-114 clutch
   G = SAE No.2 housing with T.D. SP-211 clutch
   H = SAE No.3 housing with T.D. SP-211 clutch
   J = SAE No. 1 housing with through shaft
   K = SAE No. 2 housing with through shaft
   L = SAE No. 3 housing with through shaft
   M = SAE No. 4 housing with through shaft
   N = SAE No. 1 housing with through shaft and SP-114 clutch
   P = SAE No. 1 housing with through shaft and SP-211 clutch
   R = SAE No.2 housing with through shaft and SP-211 clutch
   S = SL-111 clutch with 1 •116inch offset
   T = SL-111 clutch with 2Ye inch offset
   U = SAE No.1 housing with T.D. SP-214 clutch
   V = SPECIAL bearing release collar

EXAMPLE:

28 275 C (28275C)
L SAE No. 3 housing
1 pump drive
28000 series

28 213 M (28213M)
L SAE No. 4 housing with through shaft
3 pump drive
28000 series

SERIES 59000

MODEL NUMBER CODE
PUMP DRIVE

CLUTCH DRIVEN AND PLATE DRIVE MODELS

59 XP XX (59XPXXXXX)
A B C DEFG

1. Section A - 59 = 59000 Series
2. Section B - 2P = 2 Pump Drive
   3P = 3 Pump Drive
   4P = 4 Pump Drive
3. Section C - Flywheel Size or Clutch Size

08 = 8"	10 = 10" Single Plate
10 = 10"	11 = 10 1/2" Single Plate
11 = 10 1/2"	14 = 14" Single Plate
14 = 14"	21 = 11" 2 Plate
	24 = 14" 2 Plate

4. Section D - C = Clutch Driven P = Plate Driven
5. Section E - Clutch or Flywheel Housing Size
   1 = SAE No. 1
   2 = SAE No. 2
   3 = SAE No. 3
6. Section F - Ratio Code = •
7. Section G - (Optional) E = Thru shaft Extension.
   F = Thru Pinion Shaft on Clutch

EXAMPLES: Driven Models: F = SAE "A" Center Pad on Plate Driven Models

59 r 110 C 2 A \5 P, 1g:; ;: 1
- SAE No. 2 Housing
- Clutch Driven
- 10" Flywheel
- 2 Pump Model
- 59000 Series

59 3P NS P 1 H (593 PNSP1H)
- f ousing
- Plate Driven
- Non Standard Flywheel
- 3 Pump Model
- 59000 Series

INDEPENDENT INPUT MODELS

59 XP E (59XPFX)
A B CD E

1. Section A - 59 = 59000 Series
2. Section B - 2P = 2 Pump Drive; 3P = 3 Pump Drive; 4P = 4 Pump Drive
3. Section C - F = Flange Drive
4. Section D - Ratio Code = *
5. Section E - (Optional) E = Thru shaft extension

EXAMPLES:

59 2P F A (592PFA)
- 1.00:1 Ratio
- Flange Drive
- 2 Pump Model
- 59000 Series

59 4P F B (594PFB)
- .836:1 Ratio
- Flange Dnve
- 4 Pump Model
- 59000 Series

•See next page for ratios

* 4 Pump Ratio Code

A = .778:1 Speed Up (1.286)
B = .836:1 Speed Up (1.196)
E = 1.1960:1 Reduction
F = 1.286:1 Reduction
G = 1.00:1
H = 1.383:1 Reduction
J = .723:1 Speed Up (1.383:1)
K = 1.113:1 Reduction
L = .898:1 Speed Up (1. 113)

* 2 Pump Ratio Code

A = 1.00:1
B = 1.10: 1 Reduction
C = .909:1 Speed Up (1.10)
D = 1 .40:1 Reduction
E = .714:1 Speed Up (1.40)
F = 1.545:1 Reduction
G = .647:1 Speed Up (1.545)
H = .585:1 Speed Up (1.709)

* 3 Pump Ratio Code

A = .778:1 Speed Up (1.286)
B = .836:1 Speed Up (1.196)
C = .846:1 Speed Up (1.182)
D = 1.182: 1 Reduction
E = 1.196: 1 Reduction
F = 1.286:1 Reduction
G = 1.00:1
H = 1.283:1 Reduction
J = .723: 1 Speed Up (1.383)
K = .898:1 Speed Up (1.113)
L = 1.113:1 Reduction

SERIES
61000

FUNK MANUFACTURING COMPANY MODEL CODE

PLATE DRIVEN AND CLUTCH DRIVEN MODELS

61 S X X XX X X X X (61SXXXXXXXX)
A BCD E FGHJ

1. Section A - 61 = 61000 Series
2. Section B - S = Engine mounted (adapter to SAE flywheel housing)
3. Section C - S.A.E. Flywheel housing size
   3 = SAE No. 3
   4 = SAE No. 4
   5 = SAE No. 5
4. Section D - P = Plate Drive; C = Clutch Drive
5. Section E - Flywheel size (nominal clutch size)
   71/2 = 71/2"
   08 = 8"
   10 = 10"
   NS = Non Standard
6. Section F - 2 = 2 Pump Drive;
   3 = 3 Pump Drive
7. Section G - L.H. Pump Size
   A = SAE "A"; B = SAE "B";
   C = SAE "C"
8. Section H - R.H. Pump Size on two Pump Models Upper center pump Size on three pump models
   A = SAE "A"; 8 = SAE "8";
   C = SAE "C"
9. Section J - R.H. Pump Size on three pump models only
   A = SAE "A"; B = SAE "8";
   C = SAE "C"

EXAMPLES:

61 S 3 C 08 2 B B (61S3COB288)

- 2 Pump Drive
- 8" Clutch
- Clutch Drive
- SAE No. 3 Housing
- Engine Mount
- 61000 Series

61 S 4 P

- center
- SAE B Pump L.H.
- 3 pump drive
- 10" flywheel
- Plate Drive
- SAE No. 4 Housing
- Engine Mount
- 61000 Series

INDEPENDENT INPUT MODELS

61**M** X X X X X {61MXXXXX)
A B C D E F G

1. Section A - 61 = 61000 Series
2. Section B - M = Independent Input
3. Section C - K = Keyed input shaft;
   N = Splined Input Shaft;
   NS = Non Standard;
   D = Input Disconnect Assembly
4. Section D - 2 = 2 Pump Drive;
   3 = 3 Pump Drive
5. Section E - Left Hand Pump Size
   A = SAE "A";
   B = SAE "B";
   C = SAE "C"
6. Section F - Right Hand Pump Size on 2 pump Models
   Upper Center Pump Size on 3 pump Models
   A = SAE "A";
   B = SAE "B";
   C = SAE "C"
7. Section G - Right Hand Pump Size on 3 pump Models
   A = SAE "A";
   B = SAE "B";
   C = SAE "C"

EXAMPLES:

61 M N 2 A B (61MN2AB)
SAE "B" Pump Right Side
SAE "A" Pump Left Side
2 Pump Drive
Spline Input Shaft
Independent Input
61000 Series

61 **M** K 3 C B C (61MK3CBC)
SAE "C" Pump Lower Right
SAE "B" Pump Upper Center
SAE "C" Pump Lower Left
3 P4mp Drive
Keyed Input Shaft
Independent Input
61000 Series

DIRECT ENGINE MOUNT MODELS

fil. XX • • • • {61 XXXXXX)
A B C D E F

1. Section A - 61 = 61000 Series
2. Section B - WA = Adapter to Wisconsin Engine Series VG40 with CA-69-C-2 Crankshaft; 1948 Bearing Retainer and PH-278 Rear Crankshaft Seal
   WB = Adapts to Wisconsin Engine Series V4610 and V465D with CA-75-C-1 Crankshaft and PL-150-1 Key
   WC = Adapts to Wisconsin Engine VH4D with CA-71-A-14 Crankshaft; BG-210-C-13 Rear Bearing Retainer and PH-200-8 Rear Crankshaft Seal.
   ON = Adapts to Onan Engine Series NH and MS with crankshafts equivalent to Onan Drawing Number 110C960
   VW = Adapts to Volkswagen Engine 3. Section C - Indicates length input shaft and flange type as follow:
   A = 27" Shaft, 7C, BC, and 1800 Flange
   B = 4.94" Shaft, 7C, BC, and 1800 Flange
   C = 4.31" Shaft, 6C, 7C, and 1600 Flange
   0 = 2112 Diameter with V2 keyway
4. Section D - Indicates how many pump drive pads 5. Section E - Indicates left hand pump pad size on 2 pump model and lower left hand pump pad size on 3 pump model
6. Section F - Indicates right hand pump pad size on 2 pump model and upper center pump pad size on 3 pump model
7. Section G - Indicates lower right hand side pump pad size on 3 pump model

SERIES 56000

MODEL NUMBER CODE
PUMP DRIVE

1. CLUTCH DRIVEN MODELS

A. The Model Number is divided into three sections

560 XX X
ABC

1. Section" A" is always 560 and designated the 56000 Series
2. Section "8" indicates clutch driven models as follows:
   "01" = 2 Pump Clutch Driven
   "04" = 3 Pump Clutch Driven
   "11" = 5 Pump Clutch Driven
3. Section "C"' indicates clutch size and clutch housing size, as follows:
   "A" = SP-114 or SP-214 Clutch and SAE No. O Clutch Housing.
   "C" = SP-211 Clutch and SAE No. 1 Clutch Housing
   "D" = SP-114 or SP-214 Clutch and SAE No. 1 Clutch Housing
   "F" = SP-211 Clutch and SAE No. 2 Clutch Housing
   "G" = SL-214 Clutch and SAE No. 1 Clutch Housing

2. PLATE DRIVE MODELS

A. Three Section Model No. as Above:

560 **XX** X
ABC

1. Section "A" (560) Indicates basic 56000 Model
2. Section "8" Indicates Plate Driven Models as follows:
   "02" = 2 Pump Plate Driven
   "05" = 3 Pump Plate Driven
   "12" = 5 Pump Plate Driven
3. Section "C" Indicates Engine Bell Housin!t and Engine Adapter Size
   A = SAE No. 0
   8 = SAE No. 1
   C = SAE No. 2

3. INDEPENDENT INPUT MODELS

A. Three Section Model Number

560 **XX** X
ABC

1. Section "A" Indicates Basic 56000 Model
2. Section "B" Indicates Independent Input Models as follows:
   "03" = 2 Pump Models (10" Gear Centers)
   "06" = 3 Pump Models (10" Gear Centers)
   "13" = 5 Pump Models (16" Gear Centers)
   "15" = 5 Pump Models with Drive Flange Offset to Side
3. Section "C" Indicates type input flange as follows:
   A = Flange to fit spicer 1700 and 1800 or mechanics 7C and 8C.
   8 = 3 Inch Diameter shaft with 3/4" Keyway

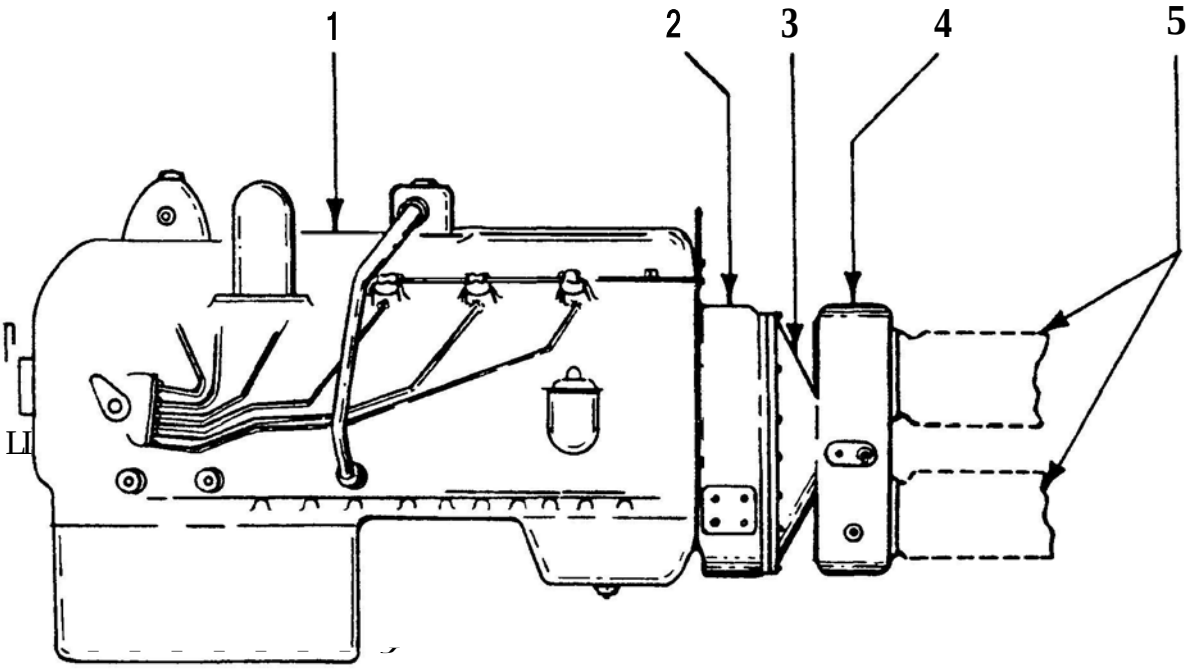
4. LINE SHAFT INPUT MODELS

A. Three Section Model Number

560 XX X
ABC

1. Section "A" Indicates Basic Model 56000. W,
2. Section "B" Indicates Line Shaft Input Models as follows:
   "07" = 3 Pump Models
   "08" = 4 Pump Models
   "09" = 5 Pump Models

TYPICAL DISASSEMBLY AND ASSEMBLY PROCEDURES FOR MODELS 18000, 59000, & 61000 PUMP DRIVES



Power Train with engine mounted Pump Drive

1. Engine 2. Flywheel Cover 3. Engine Adapter 4. Pump Drive 5. Hydraulic Pumps

DISASSEMBLY

1. Drain oil from pump drive gear box by removing allen head pipe plug from bottom of main case.
2. Remove hydraulic pumps by removing capscrews, or nuts from studs. Remove pumps straight away from pump drive.
3. Remove pump drive from engine by removing capscrews, holding engine adapter housing to flywheel cover of engine. Remove pump drive straight away from engine.
   a. Clutch driven models:
      Remove nut and starwasher holding clutch bearing lubrication line to engine adapter. The clutch and drive shaft assembly may tend to remain with engine. Should this occur, move clutch throwout handle in a manner which will allow clutch sliding sleeve trunions to disengage from throwout fork.
   b. Flex plate driven models:
      The drive shaft will remain with either the drive plate or the pump drive box. Be prepared to retrieve drive shaft from either.

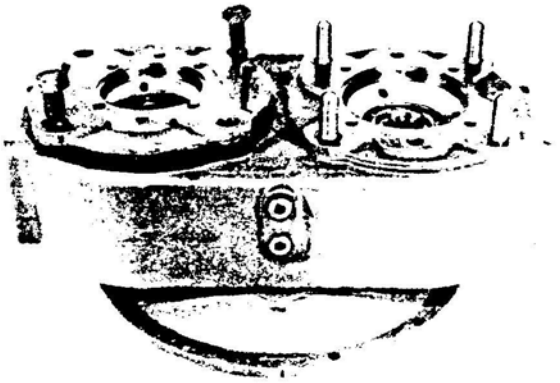


Fig. 4

Pump drive gear box should be positioned so that the hydraulic pump adapter pads are facing up.

Remove place bolts or nuts from studs and lift adapter pads up from gear box.

Fig. 5

Lift driven gears and their bearings from pump drive box. This can be done by hand since the bearings are slip fitted to the housing and pump adapter bores. Bearings are press fitted to gear hubs. It may be necessary to tip gear slightly to clear pinion gear bearing pocket.

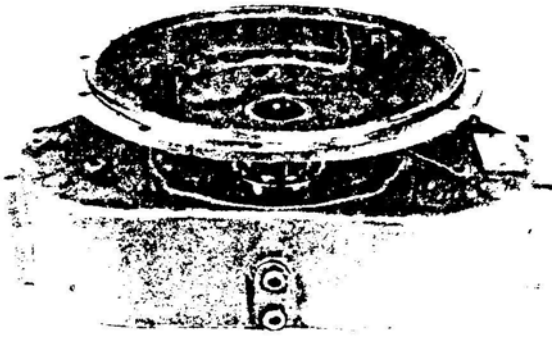


Fig. 6

After all driven gears and their bearings have been removed, position gear box so that the engine adapter (clutch housing or independent input flange) is facing up. Remove place bolts and lift engine adapter up from gear box. Lift pinion gear and bearings from pump drive box.

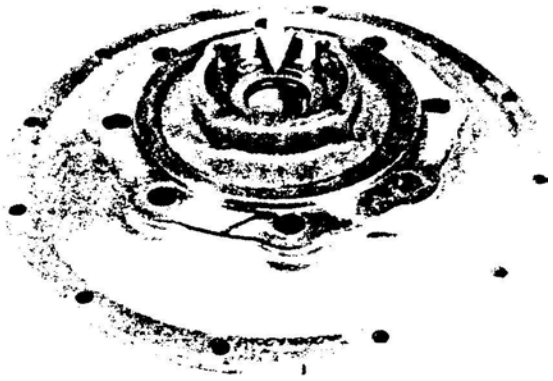


Fig. 7

Should replacement of oil seal be required, drive oil seal toward engine side of engine adapter. Note: Drive in direction of arrow.

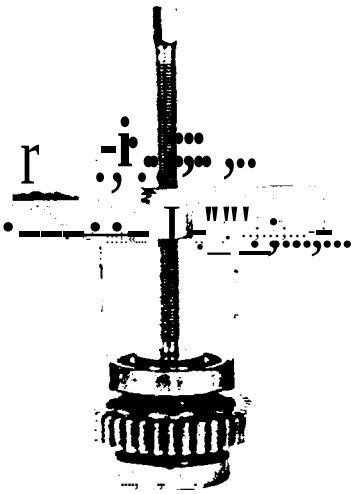


Fig. 8

Toremove bearings from gear hubs. use gear puller or Arbor Press.

REASSEMBLY

For assembly of models 28000. 59000, and 61000 pump drives, use reverse procedure of figures 1 through 8.

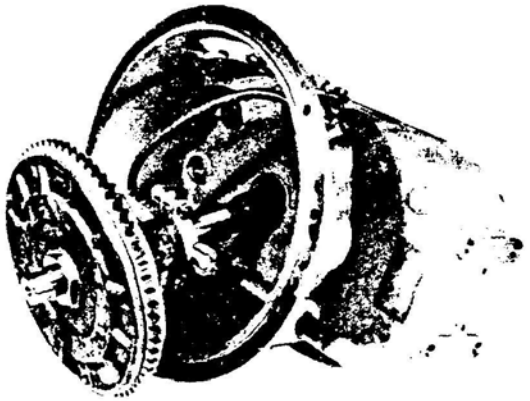
NOTE: Plastic cord used for gasket material under pump adapter plates and input housing is not reusable. Replace with new material when reassembling. See drawing number 4028802 for installation of cord gasket. Place bolts should not be re-used. Clean the old loctite out of the bolt hole threads. Install new place bolts with loctite 262 on models 28000 and 59000, the engine adapter, clutch housing and pump pad. Place bolts are torqued to 200ft. lbs. (271 nm). If studs are used in pump drive pad, torque studs to 150 ft. lbs. (203 nm). The 61000 pump drive engine adapter, clutch housing and pump drive pads are torqued to 150 ft. lbs. (203 nm).

REASSEMBLY

Replacement of oil seal

Install oil seal from engine side of engine adapter. The rubber lip of the oil seal must point toward the inside of pump drive gear box.

Note: Drive in direction of arrow.



Clutch driven models

Install clutch and shaft assembly into pinion gear of pump drive before mounting to engine.

SERVICE PARTS

WHEN ORDERING SERVICE PARTS THE FOLLOWING INFORMATION LOCATED ON THE IDENTIFICATION TAG, MUST BE GIVEN TO PARTS DEPARTMENT PERSONNEL.

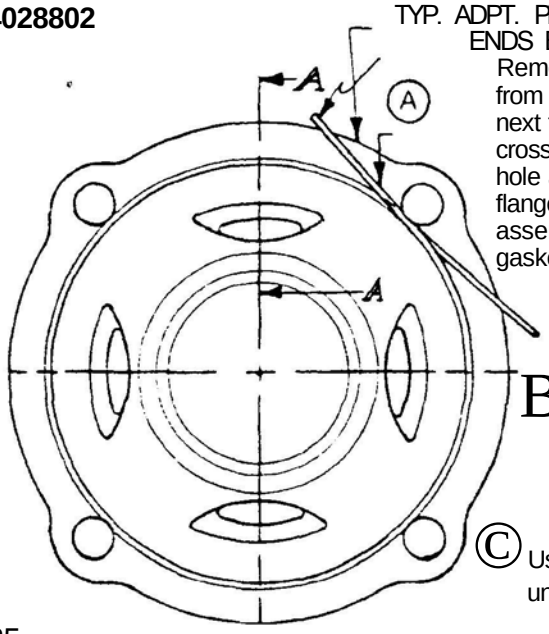
MODEL NUMBER
SPEC NUMBER
SERIAL NUMBER
RATIO

Drive plate models

When installing drive plate on flywheel, be sure the long end of the drive plate hub is toward the engine. The hub should slide into the pilot bearing bore of the flywheel to insure proper alignment of the drive hub and drive shaft.

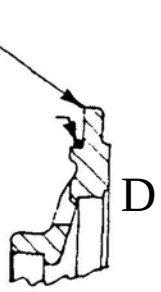
Note: Arrow indicates engine side

4028802



TYP. ADPT. PLT.
ENDS BEYOND FLANGE

Remove protective paper strip from cord and with adhesive side next to metal, install around pilot. cross ends as shown behind bolt hole and let ends extend beyond flange. Use caution in assembly to case to prevent gasket dislocation.



D

B Do not attempt to re-use this gasket. For reassembly use new gasket material. On flywheel housings involving more than 4 bolt holes - be sure string gasket lap joint falls behind one hole location.

Ⓒ Using bolt or stud fastener, not behind an unused hole.

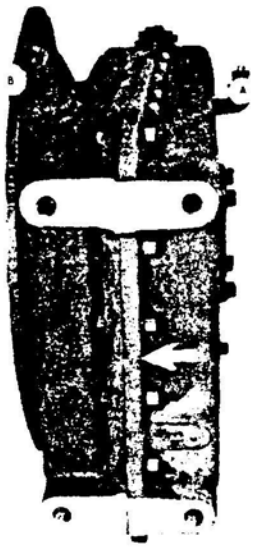
NOTE: The 56000 Model pump drive gear box uses a split case with the two halves dowelled and bolted together, do not disconnect these two halves until the entire pump drive assembly has been removed from the machine.

1. Drain oil from pump drive gear box
2. Remove hydraulic pumps from pump drive by removing the capscrews and pulling the pumps straight away from the gear box.
3. Remove the pump drive from the engine, it engine adapter is mounted. If not mounted to engine, disconnect and remove the pump drive from the input source.

Remove dowell pins by driving them toward the engine (or input) side of pump drive.

(Arrow indicates dowel! pin and direction of removal.)

If air breather (A) is damaged, replacement is necessary. Do not plug the elbow. (8) indicates engine adapter.



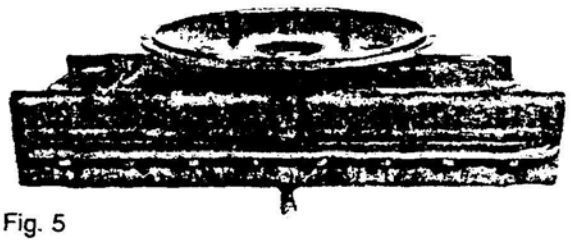


Fig. 5

Place pump drive on work bench with engine (or input) side up. Remove engine adapter or independent input drive flange from gear box.

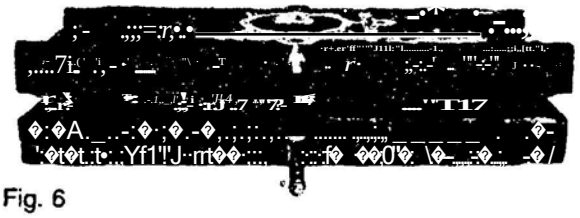


Fig. 6

Remove the 24 capscrews, lockwashers and nuts which couple together the two halve (input and output housing) of pump drive. Lift the upper (input) half straight up and remove gasket. (A) Input housing (8) Output housing. Arrow indicates direction *of* removal.

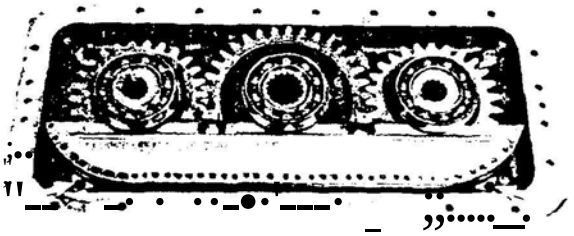


Fig. 7

Remove the two capscrews which hold the oil trough *to* lower (output housing) and remove trough.

If trough cannot be tipped and pulled out from under the gears, it will be necessary to lift each gear and bearing assembly *from* the output housing until trough can be removed.

Arrows indicate oil trough capscrews.

8. With oil trough removed, lift gears and their bearings from output housing. This can be done by hand since bearings are slip fitted to the housing bores and press fitted to gear hubs.
9. To remove bearings from gear hubs use a gear puller or arbor press.

ASSEMBLY

For assembly of the Model 56000 Pump Drive, use reverse procedure of Figures 1 through 9. The 4 place bolts for the engine adapter or clutch housing should not be re-used. Clean the place bolt hole threads to remove the old loctite. Install the new place bolts with loctite 262 and torque to 200 ft. lbs. (271 nm). Torque the 24 capscrews and nuts to 75 ft lbs.

SERVICE PARTS

When ordering service parts, the following information located on the identification tag must be given to parts department personnel.

Model Number
Spec Number
Serial Number